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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/604,457	07/22/2003	Chien-Fong Kuo	ACMP0091USA	1456
27765	7590	04/28/2004	EXAMINER	
NAIPO (NORTH AMERICA INTERNATIONAL PATENT OFFICE) P.O. BOX 506 MERRIFIELD, VA 22116			BLACKMAN, ROCHELLE ANN J	
			ART UNIT	PAPER NUMBER
			2851	

DATE MAILED: 04/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/604,457	Applicant(s) KUO, CHIEN-FONG 	
	Examiner Rochelle Blackman	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: on pg. 2, paragraph [0005], line 5, "though" should be - -through- -. On pg. 5, paragraph [0016], there should be a space between "schematic" and "diagram" and a space between "showing" and "a" and in paragraph [0018], line 6, there should be a space "plastic" and "piece". On pg. 6, paragraph [0019], line 15, "first elastic protrusion 54" should be - -first elastic protrusion 58- - and on line 18, "second flexible 60" should be - -second elastic protrusion 60- -. On pg. 7, paragraph [0026], line 3, there should be a space between "64d" and "to" and a space between "focus" and "the".

Appropriate correction is required.

Claim Objections

Claims 1-4 are objected to because of the following informalities: claim 1 recites the limitations "the first screw" in section (a) of the claim and "the second screw" in section (b) of the claim. Claims 2-4 fall with their parent claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, and 4-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujimori, U.S. Patent No. 5,978,054.

Regarding claims 1 and 4, Fujimori discloses a “method for assembling a projector”(see FIGS. 1-17), the projector comprising: a “lens”(see 7 of FIG. 1); a “supporting frame including a first fixed side, a second fixed side, and an elastic protrusion, the first fixed side having a first screw hole, the second fixed side having a second screw hole”(for “supporting frame”, see 9, for “first fixed side”, “second fixed side” and “elastic protrusion”, see 9b, 9d, and for “first screw hole” and “second screw hole”, see area where element 15 resides, of FIGS. 8 and 9); a “fixing device having a first through hole and a second through hole respectively located corresponding to the first screw hole and the second screw hole”(see 8 of FIG. 8 and col. 10, lines 21-30); and an “image modulator installed between the supporting frame and the fixing device, the image modulator having a first modulator side and a second modulator side”(see 1b of FIG. 9); the “method comprising the following steps: (a) screwing the first screw into the first screw hole through the first through hole to attach the fixing device onto the supporting frame, the first modulator side of the image modulator fixed neighboring to the first fixed side of the supporting frame; (b) loosely screwing the second screw into

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the second screw hole through the second through hole to make the second modulator side of the image modulator press against the elastic protrusion; (c) projecting an image to a screen, adjusting the lens to make the image projected from the first modulator side of the image modulator focused on the screen; and (d) adjusting the second screw in the second screw hole to position the second modulator side until the image projected from the second modulator side of the image modulator is focused on the screen”(for “first screw” and “second screw”, see 15 of FIG. 8 and the method steps are similarly met by the assembly of the above mentioned elements, see disclosure of FIGS. 8 and 9); and “wherein in the step (d), the supporting frame comprises two elastic protrusions, each elastic protrusion having one end connected to one of the two fixed sides and another end not connected to one of the two fixed sides”(for “two elastic protrusions”, see 9b,9d of FIGS. 8 and 9).

Regarding claims 5-11, Fujimori discloses a “projector”(see FIGS. 1-17) comprising: a “lens”(see 7 of FIG. 1); a “supporting frame including a first fixed side, a second fixed side, and an elastic protrusion, the first fixed side having a first screw hole, the second fixed side having a second screw hole”(for “supporting frame”, see 9, for “first fixed side”, “second fixed side” and “elastic protrusion”, see 9b, 9d, and for “first screw hole” and “second screw hole”, see area where element 15 resides, of FIGS. 8 and 9); a “fixing device having a first through hole and a second through hole respectively located corresponding to the first screw hole and the second screw hole”(see 8 of FIG. 8 and col. 10, lines 21-30); an “image modulator installed between the supporting frame and the fixing device, the image modulator having a first modulator

side corresponding to the first fixed side of the supporting frame, and a second modulator side corresponding to the elastic protrusion”(see 1b of FIGS. 8 and 9); a “first screw received within the first screw hole and the first through hole to attach the fixing device onto the supporting frame, the first modulator side of the image modulator fixed neighboring to the first fixed side of the supporting frame; and a second screw loosely received within the second screw hole and the second through hole to make the second modulator side of the image modulator pressing against the elastic protrusion; and wherein when rotating the second screw in the second screw hole, the position of the second modulator side of the image modulator is adjusted”(see 15 of FIG.8); “wherein the supporting frame comprises two elastic protrusions, each elastic protrusion having one end connected to the first fixed side, and another end forming a gap with the second fixed side; wherein the two elastic protrusions and the first fixed side form a C-shape; wherein the supporting frame comprises two elastic protrusions, one elastic protrusion having one end connected to the first fixed side, and another end forming a gap with the second fixed side, another elastic protrusion having one end connected to the second fixed side, and another end forming a gap with the first fixed side; and wherein one elastic protrusion and the first fixed side form an L-shape, and the other elastic protrusion and the second fixed side also form an L-shape”(for “two elastic protrusions”, see 9b,9d of FIGS. 8 and 9); “wherein the image modulator is installed in the supporting frame on the elastic protrusion, and the lens is installed on another side of the supporting frame”(see location of “image modulator” 1b in FIGS. 8 and 9 and see

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col. 10, lines 21-30); "wherein the elastic protrusion of the supporting frame is tilted toward the image modulator"(see location of "elastic protrusion" 9b,9d in FIG. 8).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori, U.S. Patent No. 5,978,054.

Fujimori discloses the claimed invention including a flat countersunk hear screw 12 engaged with the margin of the body of the holding member 9 with an adhesive applied to the threaded portion of the flat screw 12 in FIG. 7B). However, Fujimori does not disclose fixing all "screws" 15 with "adhesive".

It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply adhesive to the threaded portion of "screws" 15, as applied to screw 12 in order to increase security of "screws" 15 to its respective screw holes.

2. Claims 3 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori, U.S. Patent No. 5,978,054 as applied to claims 1 and 5 above, and further in view of Nakazawa et al., U.S. Patent No. 6,137,635.

Fujimori discloses the claimed invention except that a liquid crystal panel instead of a digital micromirror device (DMD), Nakazawa shows that a digital mirror device is an equivalent structure known in the art (see FIGS. 1-3 and col. 6, lines 33-35). Therefore, because these two image modulators were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute the liquid crystal panel for a digital mirror device.

3. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori, U.S. Patent No. 5,978,054 as applied to claim 5 above, and further in view of Natsuyama, U.S. Patent No. 6,724,445.

Fujimori discloses the claimed invention except for a "flexible frame installed between the image modulator and the fixing device for tightly combining the image modulator and the fixing device".

Natsuyama discloses frame 30 comprising plastic stoppers 33 and plastic oscillating arms 34 that retain LCD panel 40, making LCD panel 40 capable of absorbing vibration/shock effectively and compensates a low dimensional accuracy of frame 30 or LCD panel 40 (see Figs. 1-5 and col. 5, line 62 to col. 6, line 24).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to install a frame, like that of the Natsuyama reference, between the "image modulator" and "fixing device" of the "projector" of the Fujimori reference, in order to make the "image modulator" capable of absorbing vibration/shock effectively and compensates a low dimensional accuracy of the frame or the "image modulator".

4. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fujimori, U.S. Patent No. 5,978,054 as applied to claim 5 above, and further in view of Muramatsu, U.S. Patent No. 6,675,470.

Fujimori discloses the claimed invention including a flexible printed circuit board (FPC) 10 is conductively secured to the liquid crystal panel 1b by an anisotropic conductive film (ACF) 11 and extended to the outside from the recess of the frame 8 (see FIGS. 5, 6, 8, and 9). However, Fujimori does not appear to disclose a fixing device that is a "circuit board" and a conductive plastic that is "installed between the image modulator and the fixing device for electrically connecting the image modulator and the fixing device".

Muramatsu discloses an LCD device 1 comprising LCD panel 50 with a flexible wiring board 20 connected to the rear of LCD panel 50, mounted to circuit board 10, to configure an electronic apparatus, and elastic conductive members 30 disposed between LCD panel 50 and circuit board 10 for electrical connection between LCD panel 50 and circuit board 10, providing higher contact reliability in connecting the flexible wiring board 20 with circuit board 10 (see Fig. 1, col. 1, lines 33-39, col. 2, lines 11-20, and col. 6, lines 17-26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to mount the "image modulator" of "projector" of the Fujimori reference to a "fixing device" that is circuit board, as taught by Muramatsu in order enable configuration of the projector that is not possible with terminals formed on the preexisting flexible printed circuit board and further, with plastic conductive members

disposed there between, as taught by Muramatsu in order to electrically connect the "image modulator" to the circuit board, thus providing higher contact reliability in connecting the flexible printed circuit board with the circuit board.

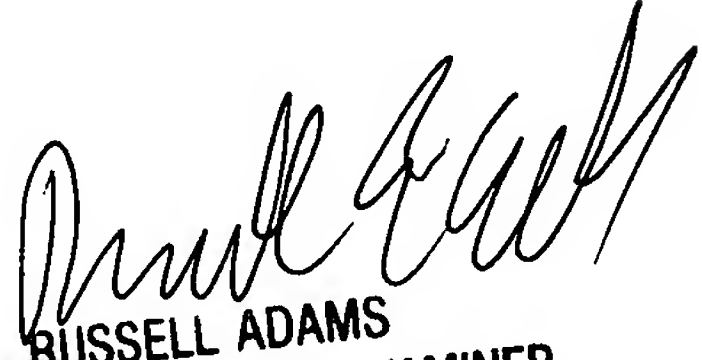
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rochelle Blackman whose telephone number is (571) 272-2113. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russell Adams can be reached on (571) 272-2851. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RB


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